Engineering Interpretations

Chemical Properties

This table shows estimates of some characteristics and features that affect soil behavior. These estimates are given for the major layers of each soil in the survey area. The estimates are based on field observations and on test data for these and similar soils.

Properties

DEPTH to the upper and lower boundaries of each layer is indicated.

SOIL REACTION is a measure of acidity or alkalinity and is expressed as a range in pH values. The range in pH of each major horizon is based on many field tests. For many soils, values have been verified by laboratory.

SALINITY is a measure of soluble salts in the soil at saturation. It is expressed as the electrical conductivity of the saturation extract, in millimhos per centimeter at 25 degrees C. Estimates are based on field and laboratory measurements at typical sites of nonirrigated soils.

This subsection includes:

• (a) Chemical Properties

St Charles County, Missouri Chemical Properties of the Soils

Map symbol and soil name	Depth	Cation exchange capacity 	Effective cation exchange capacity	Soil reaction	Calcium carbon- ate	Gypsum 	Salinity	Sodium adsorp- tion ratio
	In	meq/100 g	meq/100 g	рН	Pct	Pct	mmhos/cm	_
2D:			 					
Goss	0-4	i	9.0-15	4.5-6.0	i o i	o i	0	j o
	4-16	j	10-16	4.5-6.0	j o j	0	0	j o
	16-60	ļ	20-40	4.5-6.0	0	0	0	0
2F:		 	 					
Goss	0-3		6.0-16	4.5-6.0		0	0	0
	3-16		10-16	4.5-6.0	i o i	o i	0	i o
	16-60		20-40	4.5-6.0	0	0	0	0
3:		 	 					
Twomile	0-6	6.0-12	 	 5.1-6.0				
TWOMITE	6-18	0.0 12	6.0-12	4.5-6.0				
	18-28		6.0-12	3.6-6.0				
	28-60		12-22	3.6-6.5				
1D:								
Menfro	0-5	10-16	l 	 5.1-7.3				
Melitio	5-38	15-20	 	5.1-7.3				
	38-60	5.0-10		5.6-7.3				
Goss	0-4		 9.0-15	 4.5-6.0		0	0	
GOSS	4-16	 	10-16	4.5-6.0		0	0	0
	4-16 16-60	 	20-40	4.5-6.0		0	0	0 0
	10-00		20-40	4.5-6.0 		0	U	
5C:		İ	j		j j	j		j
Crider	0-8			5.1-7.3			0	
	8-23			5.1-7.3			0	
	23-60			4.5-6.0			0	

St Charles County, Missouri Chemical Properties of the Soils

D2: Crider	In 0-8 8-23 23-60	meq/100 g	 meq/100 g 	 5.1-7.3	Pct	Pct	mmhos/cm	-
	8-23			1				- 1
Crider 	8-23			1		i		
		!	!				0	
	23-60 			5.1-7.3			0	
				5.1-7.3			0	
5E:				 				
Crider	0-8	i	j	5.1-7.3	i i	j	0	j
	8-23	j	j	5.1-7.3	j j	j	0	
	23-60			5.1-7.3			0	
/B:				 				
Menfro	0-15	10-16		5.1-7.3				
	15-21	15-20		5.1-7.3				
	21-60	15-20		5.1-7.3				
/C:				 				
Menfro	l 0-8	10-16		5.1-7.3				
	8-14	15-20	i	5.1-7.3				
j	14-43	15-20		5.1-7.3				
	43-67	5.0-10		5.1-7.3				
7D2:	 			 				
Menfro	l 0-5	10-16		 5.1-7.3				
Melilio	0 3 5-38	15-20		5.1-7.3				
	38-60	5.0-10		5.1-7.3				
, T.O.						į		
7E2: Menfro	 0-4	1 10 16	 	 5.1-7.3				
Menrro	0-4 4-10	10-16	!					
	4-10 10-46	15-20 15-20	 	5.1-7.3				
}	10-46 46-60	5.0-10	 	5.1-7.3				

St Charles County, Missouri Chemical Properties of the Soils

Map symbol and soil name	Depth	Cation exchange capacity 	Effective cation exchange capacity	Soil reaction 	Calcium carbon- ate	Gypsum 	Salinity	Sodium adsorp- tion ratio
	 In	meq/100 g	 meq/100 g	 pH	Pct	Pct	mmhos/cm	
7F:								
Menfro	0-10	10-16		5.1-7.3				
	10-16	15-20		5.1-7.3				
	16-67	15-20		5.1-7.3				
8C:			 	 				
Winfield	0-7	10-15	i	5.6-7.3	i i	i		
	7-14	12-17	i	5.6-7.3	i i	j		j
	14-60		13-18	4.5-6.0				j
8D:			 	 				
Winfield	0-7	10-15		5.6-7.3	i i			
	7-34		13-18	4.5-6.0				
	34-60		10-14	4.5-6.0				
8E2:			 	 				
Winfield	0-5	14-17		5.6-7.3				
HILLICIA	5-60	13-18		4.5-6.5				
9E:			 	 				
Holstein	0-6		 	 5.6-6.5	0	0	0	0
	6-14		 	5.1-6.0		0	0	0
	14-42			4.5-6.0		0	0	
	42-60			4.5-6.0		0	0	
10F:								
Gasconade	l l 0-4	15-22	l 	 6.1-7.8		0	0	
	0-4 4-15	15-22	 	0.1-7.8 6.1-7.8		0	0	
	15-25	15-30	 	0.1-7.8	0	I		0
	13 23		! 	 				
Rock outcrop		j	i	i	i i	i		j

St Charles County, Missouri Chemical Properties of the Soils

Map symbol and soil name	Depth 	Cation exchange capacity 	Effective cation exchange capacity	Soil reaction 	Calcium carbon- ate	Gypsum 	Salinity	Sodium adsorp- tion ratio
	In	meq/100 g	meq/100 g	Hq	Pct	Pct	mmhos/cm	_
.1:								
Dockery	0-9 9-60	8.0-12 8.0-14	 	5.6-7.3	 			
.2:			 	 				
Kennebec	0-37	30-36	i	5.6-7.3	j o j	0	0.0-2.0	0
	37-60	30-36	 	6.1-7.3	0	0	0.0-2.0	0
.3:			 	 				
Auxvasse	0-13	5.0-8.0		5.6-7.3	0	0	0	0
	13-29		24-32	4.5-5.5	0	0	0	0
	29-60 		12-20	4.5-5.5	0	0	0	0
2F:								
Gatewood	0-2	8.0-16		6.6-7.8	0	0	0	0
	2-24	30-44		5.1-7.3	0	0	0	0
	24-30 		 	 				
Gasconade	0-4	15-22		6.1-7.8	0	0	0	0
	4-15	15-30		6.1-7.8	0	0	0	0
	15-19							
Crider	0-8		 	5.1-7.3			0	
	8-23			5.1-7.3		j	0	
	23-60			4.5-6.0			0	
4D2:			 	 				
Keswick	0-3	20-25	ļ	4.5-7.3		j		
	3-60		30-50	4.5-6.0				
	60-64	30-36		4.5-7.8	0-15			

St Charles County, Missouri Chemical Properties of the Soils

Map symbol and soil name	Depth	Cation exchange capacity	Effective cation exchange capacity	Soil reaction 	Calcium carbon- ate	Gypsum 	Salinity	Sodium adsorp- tion ratio
0.7.0	In	meq/100 g	 meq/100 g	 pH	Pct	Pct	mmhos/cm	
27C:	0 12	0 0 1 5					0	
Armster	0-13	8.0-15		4.5-7.3	0	0	0	0
	13-48	18-25		4.5-7.3	0	0	0	0
	48-67	10-20		6.1-7.8	0	0	0	0
 31C:			 	 				
Hatton	0-15	6.0-12		5.1-7.3	i i			
j	15-29		12-25	4.5-5.5	i i			
j	29-38		10-20	4.5-5.5	i i			i
į	38-67	10-20	i	5.1-6.0	i i	j		j
		İ				ļ		
34E:								
Lindley	0-10	10-16		4.5-7.3	0	0	0	0
	10-37		15-20	3.6-6.5	0	0	0	0
	37-64	10-16		6.1-7.8	0	0	0	0
35B:			 	 				
Mexico	0-13	10-18		5.1-7.3				
	13-22		18-26	4.5-6.0				
j	22-31		26-30	4.5-6.0				
	31-70	18-26		5.1-7.3				
İ	70-74	14-26		5.1-7.3				
37: Marion	0 12	7 0 16	 				0	
Marion	0-13	7.0-16	1	4.5-7.3		0	0	0
	13-32		24-31	4.5-5.5	0	0	0	0
	32-44		15-20 12-18	4.5-6.0 4.5-6.0		0	0	0
	44-60		12-18	4.5-6.0 	0	0	U	l O
40:				 				
Westerville	0-13		i	4.5-7.3	i i		0	j
i	13-37	i		4.5-5.5	i i		0	i
j	37-60		i	5.1-6.0	i i		0	i

St Charles County, Missouri Chemical Properties of the Soils

Map symbol and soil name	Depth	Cation exchange capacity	Effective cation exchange capacity	Soil reaction 	Calcium carbon- ate	Gypsum	Salinity	Sodium adsorp- tion ratio
41:	In	meq/100 g	meq/100 g	 pH	Pct	Pct	mmhos/cm	
Freeburg	0-10	6.0-15		 6.1-7.3	1 0 1	0	0	
11ccbarg	10-19		13-18	4.5-6.0		0 1	0	1 0
	19-60		14-18	4.5-6.0	0	0	0	0
43:			 		 			
Cedargap	0-5	8.0-18		5.6-7.3	i o i	0	0	0
	5-35	6.0-18	i	5.6-7.3	j o j	0	0	0
	35-60	6.0-18	<u> </u>	5.6-7.3	0	0	0	0
44:					 			
Sensabaugh	0-5		i	5.6-7.8	i i	j	0	j
	5-30		j	5.6-7.8	j j	j	0	j
	30-60			5.6-7.8			0	
48A:					 			
Weller	0-7	15-20	ļ	4.5-7.3	0	0	0	0
	7-41		30-35	4.5-6.0	0	0	0	0
	41-63	25-30		5.1-6.0	0	0	0	0
48B:								
Weller	0-10	15-20		4.5-7.3	0	0	0	0
	10-41		30-35	4.5-6.0	0	0	0	0
	41-63	25-30		5.1-6.0	0	0	0	0
48C:								
Weller	0-6	15-20	ļ	4.5-7.3	0	0	0	0
	6-41		30-35	4.5-6.0	0	0	0	0
	41-63	25-30		5.1-6.0	0	0	0	0

St Charles County, Missouri Chemical Properties of the Soils

Map symbol and soil name	Depth	Cation exchange capacity 	Effective cation exchange capacity	Soil reaction 	Calcium carbon- ate	Gypsum	Salinity	Sodium adsorp- tion ratio
54C:	In	meq/100 g	meq/100 g	 pH	Pct	Pct	mmhos/cm	
Harvester	0-2		 	 5.6-7.3			0	
nar veseer	2-31		 	5.6-7.3	 		0	
	31-67			5.6-7.3			0	
Urban land								
54D:		 	 		 			
Harvester	0-2	j	i	5.6-7.3	i i		0	j
	2-31		i	5.6-7.3	j j		0	
	31-67			5.6-7.3			0	
Urban land			 	 	 			
62:			 		 			
Edinburg	0-20	22-29	i	5.6-7.8	i o i	0	0	j o
	20-44	21-28	j	5.6-7.3	j o j	0	0	j o
	44-64	13-18		6.6-7.8	0-5	0	0	0
63B:		 	 		 			
Herrick	0-22	18-24	i	5.1-6.5	j 0 j	0	0	0
	22-43		21-25	4.5-6.0	0	0	0	0
	43-60	15-25	 	5.6-7.3	0	0	0	0
67E:]	 		! 			
Menfro	0-4	10-16	j	5.1-7.3	j j	j		
	4-10	15-20	i	5.1-7.3	j j			
	10-42	15-20	i	5.1-7.3	j j			
	42-60	5.0-10		5.6-7.3	i i			

St Charles County, Missouri Chemical Properties of the Soils

Map symbol and soil name	Depth 	Cation exchange capacity 	Effective cation exchange capacity	Soil reaction 	Calcium carbon- ate	Gypsum 	Salinity	Sodium adsorp- tion ratio
	In	 meq/100 g	meq/100 g	 pH	Pct	Pct	mmhos/cm	_
70:					!!!			
Booker	1	30-45		5.6-7.3				
	12-37	40-60		5.6-7.3				
	37-60	35-50		5.6-7.3				
71:				 				
Waldron	0-6	30-40	i	6.6-7.8	i o i	o i	0	j o
	6-60	25-37	j	7.4-8.4	0	0	0	0
72:								
Blake	0-8	25-35		 6.6-8.4	5-30	0 I	0	
	8-25	20-30	i	7.4-8.4	5-30	o i	0	i o
	25-60	10-20		7.4-8.4	5-30	0	0	0
73:								
Haynie	0-10	15-20		 6.6-8.4	0-25	0 I	0	
naynie	10-60	15-20		6.6-8.4	5-30	0 1	0	
	10 00	13 20	İ	0.0 0.1			Ŭ	
74:	İ	j	İ	j	į į	İ		j
Carr	0-15	3.0-11	j	7.4-8.4	1-5	0	0	j o
	15-34	3.0-10		7.4-8.4	1-10	0	0	0
	34-60	1.0-7.0	ļ	7.4-8.4	1-10	0	0	0
75:]	 				
Hodge	0-7	3.0-10		6.6-7.8	5-10	0	0	0
110490	7-60	3.0-9.0		6.6-7.8	5-10	0 1	0	0
	, 00		İ				Ŭ	
76:	j	j	İ	j	į į	į		j
Haynie	0-10	15-20	j	6.6-8.4	0-25	0	0	0
	10-60	15-20	ļ	7.4-8.4	5-30	0	0	0
Blake	0-8	25-35		 6.6-8.4	 5-30		0	0
	8-25	20-30		7.4-8.4	5-30	0 1	0	
	25-60	10-20		7.4-8.4	5-30	0 1	0	0

St Charles County, Missouri Chemical Properties of the Soils

Map symbol and soil name	Depth 	Cation exchange capacity 	Effective cation exchange capacity	Soil reaction 	Calcium carbon- ate	Gypsum	Salinity	Sodium adsorp- tion ratio
	In	meq/100 g	meq/100 g	pH	Pct	Pct	mmhos/cm	_
77:				ļ				ļ
Hodge	0-7	3.0-10		6.6-7.8	5-10	0	0	0
	7-60	3.0-9.0		6.6-7.8	5-10	0	0	0
Blake	0-8	25-35	 	6.6-8.4	5-30	0	0	0
	8-25	20-30	i	7.4-8.4	5-30	0	0	j o
	25-60	10-20		7.4-8.4	5-30	0	0	0
79:			 	 				
Dupo	0-10	8.0-15	i	5.6-7.3	0-5	0	0	0
	10-20	6.0-12		5.6-8.4	0-15	0	0	0
	20-60	21-29		6.1-7.8	0-10	0	0	0
80:								
Portage	0-14	24-40		5.1-6.0				
1010490	14-40	21 10	30-42	4.5-5.5				
	40-75		30-42	4.5-6.0				
81:								
Haymond	0-10	4.0-15		5.6-7.3		0	0	
	10-60	4.0-15		5.6-7.3	0 1	0	0	
	60-64	4.0-15		5.6-7.3	0	0	0	0
82:								
oz. Chequest	0-20	25-30	 	 5.6-7.3		0	0	0
criequest	20-60	25-30	 	5.6-7.3		0	0	1 0
	20-00	23-30		3.1-0.0		U	U	
83:			į	į				
Lomax	0-24	11-19		5.1-6.5	0	0	0	0
	24-40	5.0-12		5.1-6.5	0	0	0	0
	40-60	2.0-5.0		5.1-7.3	0	0	0	0

St Charles County, Missouri Chemical Properties of the Soils

Map symbol and soil name	Depth	Cation exchange capacity	 Effective cation exchange capacity	 Soil reaction 	 Calcium carbon- ate	Gypsum	 Salinity 	Sodium adsorp- tion ratio
	In	meq/100 g	meq/100 g	Нд	Pct	Pct	mmhos/cm	
84:		10.10				0		
Blase	0-10	12-19		5.6-6.5	0	0	0	0
	10-32	18-30		5.6-6.0	0	0	0	0
	32-48	4.0-10		6.6-7.8	0-5	0	0	0
	48-60	1.0-10		6.6-7.8	0-5	0	0	0
85:			 	 	 			
Carlow	0-8	16-22		5.1-6.0				
	8-60		23-31	4.5-6.0	i i			
			23 32		i i			i
86:			İ		i i			
Kampville	0-13	11-16		5.1-6.0	i i			i
	13-60	i	18-25	4.5-6.0	i i			j
		İ	j	İ	į į			İ
90:					į į			
Hurst	0-10	14-20		4.5-6.5	0	0	0	0
	10-16	11-19		4.5-6.5	0	0	0	0
	16-60	21-29		4.5-7.3	0	0	0	0
								ļ
91:					!!!			
Pits								
AED:]	
Orthent			 	l 			 	
Of theirt	 		 	 	 			
M-W:			 	 	ı 			
Water								
			İ					
w:		İ	İ	İ	<u> </u>			İ
Water					j i			j
j		İ	j	İ	j i			j
i	i	i	i	i	i i		I	i